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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,772	01/17/2002	Young-Ki Kim	8071-144T (OPP010051US)	2680

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F. Chau & Associates, LLC
130 Woodbury Road
Woodbury, NY 11797

EXAMINER	
NGUYEN, JENNIFER T	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/046,772	KIM, YOUNG-KI	
	Examiner	Art Unit	
	Jennifer T. Nguyen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-8 and 11-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8,11,12,15-22 and 26-31* is/are allowed.

6)☒ Claim(s) *1-4,6,7,13,14 and 23-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is responsive to amendment filed on 4/11/06.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 6, 7, 14, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al. (U.S. Patent No. 6,271,816) in view of Ozawa (Patent No.: 6,670,953).

Regarding claim 1, referring to Figs. 1A, 2C, and 2G, Jeong teaches a liquid crystal display, comprising:

a liquid crystal panel including a plurality of gate lines (R0, R1), a plurality of insulated data lines (C0, C1) crossing the gate lines (R0, R1), and a plurality of first thin film transistors (106) each having a gate electrode connected to a gate line (R0) and a source electrode connected to a data line (C0), and a drain electrode connected to a liquid crystal capacitor;

a gate driver (102) for sequentially supplying a gate-on voltage to the gate lines (R0, R1) for turning on the thin film transistors (106);

a data driver (104) for applying a data voltage to the data lines (C0, C1);

a data line sharing switch having a plurality of commonly controlled switching devices (112), each of which is formed between each of the adjacent data lines (C0, C1), respectively; and

a sharing signal generator for outputting a sharing control signal (i.e., neutralizer enable) for turning on the switching devices (112) to connect the adjacent data lines (col. 1. lines 10-67, col. 5, lines 1-67, and col. 6, lines 1-31).

Jeong differs from claim 1 in that he does not specifically teach the first thin film transistors are disposed between the data line sharing switch and the data driver.

However, referring to Fig. 1, Ozawa teaches first thin film transistors are disposed between the data line sharing switch (T7a-T7c) and the data driver (i.e., a data driver includes a shift register 7) (col. 7, lines 16-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the thin film transistors are disposed between the data line sharing switch and the data driver as taught by Ozawa in the system of Jeong in order to avoid the density of elements at one end of the matrix display.

Regarding claim 2, Jeong further teaches the data line sharing switch is formed on the liquid crystal panel (col. 1, lines 16-67 and col. 6, lines 24-31).

Regarding claim 3, Jeong also teaches that the switching devices (112) are second thin film transistors (col. 5, lines 35-36).

Regarding claim 4, Jeong further teaches the second thin film transistors (112) are manufactured by the same process as the first thin film transistor (106) (Fig. 1A, col. 5, lines 1-67, col. 6, lines 1-31).

Regarding claim 6, Jeong further teaches the sharing signal generator applies a sharing signal pulse (i.e., neutralizer enable) for sharing the data lines (C0, C1) between the gate-on voltages applied to adjacent gate lines respectively (col. 5, lines 1-67, col. 6, lines 1-31).

Regarding claim 7, Jeong teaches the sharing signal generator applies a sharing signal pulse for sharing the data lines (C0, C1) after the voltage applied to the previous gate line turns to a gate-off voltage (col. 5, lines 1-67, col. 6, lines 1-31).

Regarding claim 14, the combination of Jeong and Ozawa teaches the data line sharing switch is placed at one end of the liquid crystal panel opposite to the data driver (fig. 1, col. 7, lines 16-34).

Regarding claim 24, Jeong teaches the commonly controlled switching devices (112) are connected in series (fig. 1).

Regarding claim 25, the combination of Jeong and Ozawa teaches the data lines have minimized line capacitance (fig. 1 of Ozawa).

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al. (U.S. Patent No. 6,271,816) in view of Ozawa (Patent No.: 6,670,953) and further in view of Johnson et al. (Patent No.: US 6,304,254).

Regarding claim 13, the combination of Jeong and Ozawa differs from claim 13 in that it does not specifically teach the first and second thin film transistors comprise amorphous transistor. However, referring to Fig. 1, Johnson teaches the thin film transistors (3) comprise amorphous transistor (col. 3, lines 38-41). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the thin film transistors comprise amorphous transistor as taught by Johnson in the system of the combination of Jeong and Ozawa in order to provide a semiconductor layer with simple fabrication processes and high driving capacity.

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al. (U.S. Patent No. 6,271,816) in view of Ozawa (Patent No.: 6,670,953) and further in view of Moon et al. (Patent No. US 6,4221,039).

Regarding claim 23, the combination of Jeong and Ozawa differs from claim23 in that it does not specifically teach applying dot reverse data voltages to the data lines.

Moon teaches applying dot reverse data voltages to the data lines (figs. 8A and 8B, col. 2, lines 40-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the dot reverse data voltages as taught by Moon in the system of the combination of Jeong and Ozawa in order to prevent flicking problem of the display.

6. Claims 8, 11-12, 15-22, and 26-31 are allowed.

Response to Arguments

7. The ground of the rejection is maintained because as following reasons:

Jeong teaches plurality of commonly controlled switching devices (112) by turn on the neutralizer signal (fig. 1A). Applicant's argued that "Jeong fail to recognize the disadvantages of high line capacitance in the columns". Examiner respectfully disagrees. Jeong noted that the line capacitances 110 are not purposefully introduced into the circuit (col. 5, lines 6-7) and Ozawa teaches data lines have minimized line capacitance (fig. 1). Moreover, this limitation was not claimed in the previous amendment. Applicants stated "the switches of Ozawa are both structurally and functionally different from the switching device of Applicants'... fails to cure ...deficiencies of Jeong...". Examiner respectfully disagrees. Ozawa teaches the switching devices (T7a, T7b) to connect the adjacent data lines. Ozawa further teaches first thin film

transistors are disposed between the data line sharing switch (T7a-T7c) and the data driver (i.e., a data driver includes a shift register 7) (col. 7, lines 16-34). Thus, Ozawa cures all deficiencies of Jeong. Moreover, it would have been an obvious matter of design choice to relocate the data line sharing switch as taught by Ozawa, since such a modification would have involved a mere change in relocate of a component because this would not alter the operation and / or function of the device. Relocation is generally recognized as being within the level of ordinary skill in the art. In addition, the relocation of a well-known element is normally not directed toward patentable subject matter, *In re Japikse*, 86 USPQ 70 (CCPA 1950). Therefore, it is believed that the claimed limitations are still read on by Jeong and Ozawa and the rejection is maintained.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer T. Nguyen whose telephone number is 571-272-7696. The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Nguyen
06/15/06

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600